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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,675	03/29/2004	Hirokazu Yamagata	0756-7276	1165
31780	7590	07/03/2007		
ERIC ROBINSON			EXAMINER	
PMB 955			HU, SHOUXIANG	
21010 SOUTHBANK ST.				
POTOMAC FALLS, VA 20165				
			ART UNIT	PAPER NUMBER
			2811	
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			07/03/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/810,675

Applicant(s)

YAMAGATA ET AL.

Examiner

Shouxiang Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2,3,5,6,13-24,31-42,44-47 and 49-52 is/are pending in the application.
- 4a) Of the above claim(s) 17,23,35 and 41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,3,5,6,13-16,18-22,24,31-34,36-40,42,44-47 and 49-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 10/073,285.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

According to previous office actions, claims 2-3, 5-6, 13-24 and 31-42, 44-47 and 49-52 are pending in this application; and claims 2-3, 5-6, 13-16, 18-22, 24, 31-34, 36-40, 42, 44-47 and 49-52 remain active in this office action.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3, 5-6, 13-16, 18-22, 24, 31-34, 36-40, 42, 44-47 and 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (Applicant's admitted prior art) in view of JP'781 (JP 11-224781; 08/1999; of record) and further in view of Hosokawa (US 6,538,374).

AAPA discloses a light emitting display device (Fig. 2 in the instant disclosure), comprising: a thin film transistor (202) on an insulating surface; an interlayer insulating film (203) over the thin film transistor; an anode (205; ITO) having a first portion that has a leveling surface over the interlayer insulating film and a second portion also over the interlayer insulating film; a wiring (204) electrically connected to the thin film transistor and the anode; a bank (208) over the wiring and a portion of the anode; a light-emitting

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compound organic compound layer (206) over the anode and an upper surface of the bank; and a cathode (207) over the organic compound layer.

Although AAPA does not expressly disclose that the device can further include an insulating film between the anode and the organic compound layer, JP'781 teaches to include such an insulating film in order to improve the uniformity of the light-emitting compound layer and to reduce leaking current therethrough (see the first insulating layer 109 in Fig.1), wherein the insulating film (109) can be as thin as less than 5 nm and can be formed of a polymer through coating (see paragraphs 0010-0017 and 0022-0024), which thus can be naturally regarded as an organic resin film.

In addition, it is art known that, when a patterned stack of thin films is formed, the thin films therein can be desirably formed as a stack and then patterned the thin films together to form the patterned stack, instead of forming and patterning each thin films separately, so as to simplify patterning process for the thin films and/or for better and/or cleaner surfaces/interfaces of the individual thin films by avoiding unnecessary surface exposures for the individual thin films, as further evidenced in AAPA, wherein the stack of thin films (including 207 and 206) is naturally formed and patterned together.

Therefore, it would have been obviously to one of ordinary skill in the art at the time the invention was made to incorporate the insulating film of JP'781 into the thin film stack AAPA, so that a light-emitting device with reduced leaking current would be obtained through a process that can reduce unnecessary patterning process and/or for better and/or cleaner surfaces/interfaces of the individual thin films in the stack. And, by incorporating the insulating film of JP'781 into the thin film stack AAPA, the insulating

film in the above collectively taught device would be naturally positioned over both of the leveling surface of the first portion and an upper surface of the band, in a manner substantially same as that of the original thin film stack in AAPA.

Furthermore, although AAPA and JP'781 does not expressly disclose that the polymer insulating film can be formed of polyamide or acrylic, it is art known that polymer resins formed of polyamide and acrylic are each commonly used in the art for forming an insulating film for desired insulating properties with desired material choice, as readily evidenced in the prior art such as Hosokawa (see col. 15, lines 60-67).

Therefore, it would also have been obviously to one of ordinary skill in the art at the time the invention was made to further incorporate the art-known acrylic or polyamide insulating film such as that of Hosokawa into the light-emitting device collectively taught above by AAPA and JP'781, so that a light-emitting device with desired insulating properties and/or with desired material choice would be obtained, as it has been held that:

The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Regarding claims 13-14, 19-20, 31-32 and 37-38, it is noted that the average surface roughness (Ra) of the anode is an art-recognized resulted-oriented important parameter subject to routine experimentation and optimization; and that a low Ra such

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as in a range of 0.85 nm or less for the anode is always desirable in the art, for further reducing any potential current leakage.

Regarding claims 15, 21, 33 and 39, it is noted that each of the cited insulating materials is commonly used in the art to form an interlayer insulating film.

Regarding claims 16, 22, 34, 40 and 44-47, it is noted that it is art-known that the bank can be formed of a hardened resist/resin film that naturally includes the recited element(s) and is naturally insulating. In fact, the bank in AAPA is formed of a resin, which would have to be hardened (or hardened from a resist-like precursor) in order to remain to be sufficiently firm and stable; and it thus can be naturally regarded as a hardened resist/resin film that naturally includes the recited element(s). In addition, it is noted that any process limitations recited or implicated in these claims would not carry patentable weight in the claims drawing to a structure, because distinct structure is not necessarily produced. In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claims 49-52, it is noted that any process limitations recited or implicated in these claims about how the recited leveling surface can be formed would not carry patentable weight in the claims drawing to a structure, because distinct structure is not necessarily produced. In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985).

### ***Response to Arguments***

Applicant's arguments with respect to the above rejected claims have been considered but are moot in view of the new ground(s) of rejection.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is 571-272-1654. The examiner can normally be reached on Monday through Friday, 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard T. Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SH  
June 12, 2007



SHOUXIANG HU  
PRIMARY EXAMINER